



ROUX ASSOCIATES, INC.
Environmental Consulting
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DRAFT

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SOIL BORING LOG

WELL NO. CFMW-023a	LATITUDE Not Measured	LONGITUDE Not Measured
PROJECT NO./NAME 2476.0001Y / CFAC RI/FS Phase 1	LOCATION 2000 Aluminum Drive Columbia Falls, Montana	
APPROVED BY L. Jensen	LOGGED BY A. Hoffmann	
DRILLING CONTRACTOR/DRILLER Cascade Drilling / Carlos Anguiano	GEOGRAPHIC AREA South Leachate Pond	
DRILL BIT DIAMETER/TYPE 6-in. / Sonic Bit	BOREHOLE DIAMETER 6-inches	DRILLING EQUIPMENT/METHOD Truck Mounted / Rotasonic
LAND SURFACE ELEVATION Not Measured	DEPTH TO WATER Not Measured	SAMPLING METHOD Continuous Core
	BACKFILL 20% Bentonite Grout	START-FINISH DATE 6/17/16-6/20/16

Depth, feet	Graphic Log	Visual Description	Blow Counts per 6"	PID Values (ppm)	REMARKS
5		Dark brown, fine to coarse SAND, little Gravel, trace silt; moist Light brown, fine to coarse SAND, some fine to medium Gravel, little Silt; moist		0.0 0.0 0.3	6 ft recovery Sample CFMW-023-SO-0-0.5 and CFMW-023a-SO-0-0.5-Pb collected Sample CFMW-023-SO-0.5-2 collected
10		Brown, fine to medium GRAVEL, some fine to coarse Sand, trace boulder; moist		1.4	10 ft recovery
15		Brown, fine SAND, some Silt, little Cobble; moist		0.6	Sample CFMW-023-SO-10-12 collected
20		Boulder/Cobble; dry Brown, fine to coarse SAND and fine to medium GRAVEL, trace silt; moist		0.0 1.0 0.0	5 ft recovery
25		Boulder/Cobble; dry Brown, fine to coarse SAND and fine to medium GRAVEL; trace silt; moist		0.8	
30		Brown, fine to coarse SAND and fine to medium GRAVEL; trace cobble and silt; moist Brown, fine to coarse SAND and fine to medium GRAVEL, trace cobble; moist		0.0 0.1	6 ft recovery
35		Brown, fine to coarse SAND and fine to medium GRAVEL; trace cobble and silt; moist Brown, fine to coarse SAND, some broken Boulder/Cobble and angular Gravel, trace silt; dry		0.1 0.2	2 ft recovery
40		Brown, fine to coarse SAND, some Boulder/Cobble, little angular Gravel, trace silt; dry			7 ft recovery 38 through 107 ft PID not recorded (sample core too hot)
45		Brown, fine to coarse SAND, some Boulder/Cobble (at 46/49 ft bls) and fine to coarse Gravel, trace silt; moist			6 ft recovery
50					

BORING/FEET CFAC BORING LOGS.GPJ ROUX.GDT 7/21/16

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Depth, feet	Graphic Log	Visual Description (continued)	Blow Counts per 6"	PID Values (ppm)	REMARKS
.....		Brown, fine to coarse SAND, some Boulder (54 ft bls) and fine to coarse Gravel; dry			3 ft recovery
55		Brown, fine to coarse SAND and medium GRAVEL, some Cobble and broken Boulder (at 57 ft bls); moist			6 ft recovery 55
60		Brown, fine to coarse SAND, some fine to medium Gravel, trace cobble; dry			2 ft recovery 60
65		Brown, fine to coarse SAND, some broke Boulder/Cobble, little fine to coarse angular Gravel; dry			7 ft recovery 65
70		Brown, fine to coarse SAND, some fine to coarse Gravel, trace cobble; moist			8 ft recovery 70
75		Brown, fine to coarse SAND and fine to coarse GRAVEL, some broken Boulder/Cobble; dry			8 ft recovery 75
80		Brown, fine to coarse SAND and fine to medium GRAVEL, some Cobble, little broke Boulder and coarse Gravel; dry			11 ft recovery 80
85		Brown, fine to coarse SAND, some broken Boulder/Cobble, some fine to coarse Gravel; dry			8 ft recovery 85
90		Brown, coarse SAND, little fine to medium Sand, trace gravel; dry			8 ft recovery 90
95		Brown, fine to coarse SAND, some broken Cobble and fine to coarse Gravel, trace silt; dry			8 ft recovery 95
100					
105					

BORING/FEET CFAC BORING LOGS.GPJ ROUX.GDT 7/21/16

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Depth, feet	Graphic Log	Visual Description (continued)	Blow Counts per 6"	PID Values (ppm)	REMARKS
.....		Brown, fine to coarse SAND, some broken Boulder and fine to coarse Gravel; dry (continued)			12 ft recovery
<u>110</u>				0.0	<u>110</u>
.....		Brown, fine to coarse SAND, little fine to medium Gravel, trace silt; moist			
<u>115</u>					<u>115</u>
.....		Brown, fine to coarse SAND, little fine to medium Gravel, trace silt; wet		0.0	
.....		Brown, fine to coarse SAND, little fine to medium Gravel and Silt; wet		0.0	
<u>120</u>					<u>120</u>
.....		Tan/brown, fine SAND, little fine Gravel, trace silt; wet			10 ft recovery
.....				0.0	
<u>125</u>					<u>125</u>
.....		Grey/brown, fine to coarse SAND, some Silt, little fine to coarse Gravel; moist, medium dense/stiff		0.0	
.....		Brown, fine to coarse SAND, some Silt and broken Boulder, little fine to coarse Gravel; dry		0.0	Sample
<u>130</u>					<u>130</u>
.....		Tan/brown and purple, fine SAND, little Silt and broken Boulder; moist, dense/stiff		0.0	CFMWV-023a-SO-123-128 collected
.....		Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel; dry, dense/stiff		0.0	
<u>135</u>					<u>135</u>
.....		Brown/grey, fine to coarse SAND, little Cobble and fine to coarse Gravel, trace silt; wet, loose			12 ft recovery
.....				0.0	
<u>140</u>					<u>140</u>
.....		Brown/grey, medium GRAVEL, little fine to coarse Sand and Silt; wet, loose		0.0	
.....		Brown, fine to coarse SAND, some fine to coarse Gravel; wet, loose		0.0	
<u>145</u>					<u>145</u>
.....		Brown, fine to coarse SAND, little fine to coarse Gravel and Silt; moist, loose		0.0	
.....		Purple, fine SAND and SILT, some fine to medium Gravel, trace clay; dry, very stiff		0.0	2 ft recovery
<u>150</u>					<u>150</u>
.....		Pulverized rock		0.0	4 ft recovery
.....					
.....		Purple/grey, pulverized ROCK, some cobble, pulverized to a silty clay powder; dry		0.0	2 ft recovery
<u>155</u>					<u>155</u>
.....		Purple/grey, pulverized ROCK, some Cobble, pulverized to a silty clay powder; moist from drilling water		0.0	4 ft recovery
.....		Purple/grey, pulverized ROCK, trace cobble, pulverized to a silty clay powder; dry		0.0	
<u>160</u>					<u>160</u>
.....		Purple/grey, pulverized ROCK, some fine to medium Gravel, pulverized to a silty clay powder; moist and compact due to drilling water			4 ft recovery
.....				0.0	

BORING/FEET CFAC BORING LOGS.GPJ ROUX.GDT 7/21/16

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Depth, feet	Graphic Log	Visual Description (continued)	Blow Counts per 6"	PID Values (ppm)	REMARKS
165		Purple/grey, pulverized ROCK, some fine to coarse Gravel, pulverized to a silty clay powder; wet due to drilling water			165
.....				0.0	2 ft recovery
.....				0.0	2 ft recovery
170					170
.....					
.....					
175				0.0	175
.....					
.....					
180		Purple, BEDROCK, rock cores of purple fissile rock, broken along fractures			180
.....		Purple, BEDROCK, rock cores of purple fissile rock, broken along fractures			4 ft recovery
.....					
185					185
.....					
.....				0.0	
190					190
.....					
.....					
195					195

End of boring at 196 ft bls.
Borehole grouted to surface.

BORING/FEET CFAC BORING LOGS.GPJ ROUX.GDT 7/21/16

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